

ABSTRACT OF THE DISCLOSURE

A control apparatus which controls a controlled system with a transfer function regarded as a secondary delay, comprises an outer loop which performs negative feedback of an output of the controlled system in order to obtain a deviation between the output and a desired value, an inner loop which performs negative feedback of a signal obtained by multiplying a differential value of the output of the controlled system by a first gain to the deviation, and a nonlinear inner feedback loop which uses the differential value of the output of the controlled system and a product obtained by multiplying an absolute value of the deviation  $e$  or  $n$ -th ( $n$  is an integer) power of the absolute value by the second gain to perform positive feedback to the deviation.

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